### I-405 Improvement Project

### **Amendment 2 - Noise Study Report**

El Dorado Pre-school

In Orange County from SR-73 to the I-605 Interchange

This addendum is addressing the possible traffic noise impacts and abatement measures for the El Dorado pre-school located along the northbound lanes of I-405 between the Bushard Street and Warner Avenue overcrossings. In the final Noise Study Report dated June 2011 conducted for I-405 Improvement Project, the play area of the pre-school was not identified as a frequent outdoor use area because at the time of the field survey this pre-school, which is located in a dense commercial area was not open for business.

**Soundwall S776:** This soundwall would be located along the right-of-way line on the northbound side of I-405. Traffic noise impacts are predicted at the playground of El Dorado pre-school represented by Receiver R2.77A. Feasible traffic noise abatement in the form of a soundwall has been identified for Alternatives 1, 2, and 3 for the small playground exposed to traffic noise levels from I-405. The traffic noise analysis was conducted with barrier heights ranging from 8 to 16 feet. A 12-foot high soundwall located at the right of way line would provide feasible abatement and would cut line of sight to the truck stack.

The predicted peak hour noise level is above 75 dBA without a soundwall in place; thus, this playground would be considered severely impacted. Where severe impacts are identified, unusual and extraordinary abatement must be considered. If Soundwall S776 is determined to be unreasonable based on cost, providing the soundwall will still be required for these playground.

The following are revised noise tables for each alternative that show the information for the new Receiver R2.77A as well as new tables showing the reasonableness allowance and top of the wall information. Revised figures for each alternative that show this new soundwall are also attached. It was assumed that the Receiver R2.77A would represent one frontage unit.

## Alternative 1

Table 7-4A. Summary of Reasonableness Determination Data – Alternative 1 – Soundwall S776

Barrier I.D.: S776					
Predicted Sound Level without Barrier					
Critical Design Receiver: R2.77A					
Design Year Noise Level, dBA L <sub>eq</sub> (h):	76				
Design Year Noise Level Minus Existing I	Noise Level:	2			
Design Year with Barrier	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction, dB	6	7	7	8	8
Number of Benefited Residences	1	1	1	1	1
New Highway or More than 50% of Residences Predate 1978 <sup>b</sup>	No	No	No	No	No
Reasonable Allowance Per Benefited Residence	\$39,000	\$39,000	\$39,000	\$39,000	\$39,000
Total Reasonable Allowance	\$39,000	\$39,000	\$39,000	\$39,000	\$39,000

Note: N/A-Not applicable. Barrier does not provide 5 dB of noise reduction.

<sup>&</sup>lt;sup>a</sup> A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

<sup>&</sup>lt;sup>b</sup> This adjustment increases the abatement allowance by \$10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

Table G-2 – Predicted Future Noise Levels and Barrier Analysis – Alternative 1 – Segment 2 (Cont'd)

								I-405 P	A-ED Alte	ernative 1	Future	Wors	st H	our No	ise I	_eve	els - Le	a(h)	. d	BA <sup>1,6</sup>					
				•	e Level	.vel	evel	_	A LD AIR	- Industry	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR)								nd						
	5		its		Noise	e Le	se L	S S	_		8 f	eet		10 1	eet		12 f	eet		14 1	eet			16 fe	et
Receiver I.D.	Barrier I.D. and Location	Land Use <sup>2</sup>	Number of Dwelling Units	Existing Noise Level Leq(h), dBA¹,³	Design Year No Build N Leq(h), dBA¹	Design Year Build Noise Level Leq(h), dBA¹	Design Year No Build Noise Level Minus Existing Conditions Leq(h), dBA	Design Year Build Noise Le Minus No Build Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type <sup>4</sup>	Leq(h)	I.L.	NBR	Leq(h)	1	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L	NBR	Leq(h)	I.	NBR
R 2.66 W		SFR	3	66 MOD	65	66	-1	1	B (67)	A/E													7		
R 2.67 W		SFR	1	60 <sup>MOD</sup>	59	60	-1	1	B (67)	NONE													7		
R 2.68 W		SFR	2	55 MOD	54	54	-1	0	B (67)	NONE						-							7		
R 2.69 W		SFR	3	65 MOD	64	65	-1	1	B (67)	NONE													/		
R 2.70 W		SFR	1	58 <sup>MOD</sup> 64 <sup>MOD</sup>	57	58	-1	1	B (67)	NONE													'		
1 2.71		SFR	3	64 MOD 59 MOD	63	64	-1	1	B (67)	NONE		L											/		
11 2.72		SFR	2	54 MOD	58 53	59 53	-1 -1	1 0	B (67)	NONE													7		<del></del>
R 2.73 W R 2.74 W		SFR	3	64 <sup>MOD</sup>	63	63	-1	0	B (67)	NONE								=			_				
R 2.74		SFR	3	64 MOD	63	61	-1	-2	B (67)	NONE						_									
R 2.76		SFR	4	64 <sup>MOD</sup>	63	58	-1	- <u>-</u> 2	B (67)	NONE									_						
R 2.77A C	S776 / R/W	SCH	1	74 <sup>MOD</sup>	75	76	1	1	B (67)	A/E	70	6	1	69	7	1	69 R,T	$\vdash$	1	68	8	1	68	8	1
R 2.77 W		MFR	2	60 MOD	61	58	1	-3	B (67)	NONE	57	1	0	57	1	0	57	1	0	56	2	0	56	2	0
R 2.78 W		MFR	4	61 M,ST19	62	59	1	-3	B (67)	NONE	57	2	0	56	3		56		$\frac{\sigma}{\sigma}$	56	3	0	56	3	0
R 2.79 W		MFR	4	65 MOD	66	60	1	-6	B (67)	NONE	58	2	0	58	2	0	58		0	57	3	0	57	3	0
R 2.80 W		SFR	3	64 MOD	65	62	1	-3	B (67)	NONE					=										
R 2.81 W	S788,	SFR	3	68 MOD	69	66	1	-3	B (67)	A/E							T			62	4	0	62	4	0
R 2.82 W	&	SFR	2	67 MOD	68	67	1	-1	B (67)	A/E							T			64	3	0	64	3	0
R 2.83 W	0,02	SFR	3	66 <sup>MOD</sup>	66	65	0	-1	B (67)	NONE										63	2	0	63	2	0
R 2.84 W			4	66 M,LT11,CAL	66	65	0	-1	B (67)	NONE							T			64	1	0	64	1	0
R 2.85 W		SFR	4	66 <sup>MOD</sup>	66	66	0	0	B (67)	A/E							T			65	1	0	65	1	0
R 2.86 W		SFR	3	65 MOD	65	65	0	0	B (67)	NONE										63	2	0	62	3	0
R 2.87 W		SFR	4	64 <sup>MOD</sup>	64	64	0	0	B (67)	NONE										62	2	0	62	2	0
R 2.88 W		SFR	4	62 MOD	62	61	0	-1	B (67)	NONE									]	-	1				
R 2.89 W		SFR	3	63 <sup>MOD</sup>	63	57	0	-6	B (67)	NONE															
R 2.90 W		SFR	3	62 <sup>MOD</sup>	62	58	0	-4	B (67)	NONE															
R 2.91 W		SFR	2	63 MOD	63	62	0	-1	B (67)	NONE															
R 2.92 W		SFR	1	61 <sup>MOD</sup>	61	60	0	-1	B (67)	NONE															

- 1 Leq(h) are A-weighted, peak hour noise levels in decibels.
- 2 Land Use: SFR single-family residence; MFR multi-family residence; MH mobile Home; MOT motel/hotel; SCH school; REC recreational/park; REL religious institution; LIB library.
- 3 M Measured noise level; STxx or LTxx measurement site number; CAL noise model calibration site; MOD Estimated from No-Build Alternative and measurement sites.
- 4 S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
- 5 Barrier height needed to meet requirements at adjacent receptor(s).
- 6 Traffic noise from the freeway only; other local noise sources are not included.
- 7 Existing soundwall is at a height of 16 feet.
- ${\sf R-The\ minimum\ height\ to\ meet\ feasibility\ requirements\ of\ Caltrans'\ Noise\ Abatement\ Criteria.}$
- T Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.

- C Critical design receiver.
- Int The modeled exterior noise levels have been reduced based on window types and the interior noise criteria has been used for this receiver because there is no outdoor use.
- W Reciever protected by existing private property wall or soundwall.
- \* Non first row residences.

# Table H-2 – Barrier Locations and Elevations – Alternative 1 – Segment 2 (Cont'd)

Barrier No.	Receivers Protected (Receiverr No.)	Barrier Location / Hwy. Side	Barrier Stations <sup>1</sup>	Approximate Barrier Height, ft	Top of Barrier Elevation <sup>2</sup> , ft
S776	R2.77A	R/W /	773+50 <sup>10</sup>	12	43.6
		Northbound	774+00 <sup>10</sup>	12	43.5
			774+25 <sup>10</sup>	12	43.4
			774+50 <sup>10</sup>	12	43.4
			774+75 <sup>10</sup>	12	43.3
			775+00 <sup>10</sup>	12	43.2
			776+00 <sup>10</sup>	12	42.9
			776+50 <sup>10</sup>	12	42.8
		Appro	oximate Length: 300	ft	

- 1 Stations correspond to that of I-405 mainline unless otherwise noted.
- 2 Top of barrier elevations shall take precedence over specified barrier heights for design and construction purposes.
- 3 In-kind replacement of an existing soundwall at new location with same height.
- 4 Replacement of existing soundwall at new location with new height.
- 5 Replacement of existing soundwall at same location with new height.
- 6 Stations correspond to that of the southbound on ramp at Talbert Avenue.
- 7 Stations correspond to that of the northbound off ramp at Brookhurst Avenue.
- 8 Stations correspond to that of the southbound off ramp at Brookhurst Avenue.
- 9 Stations correspond to that of the northbound off ramp at Magnolia Street.
- 10 Stations correspond to that of the northbound off ramp at Warner Avenue.

## Alternative 2

Table 7-26A. Summary of Reasonableness Determination Data – Alternative 2 – Soundwall S776

Barrier I.D.: S776					
Predicted Sound Level without Barrier					
Critical Design Receiver: R2.77A					
Design Year Noise Level, dBA L <sub>eq</sub> (h):	77				
Design Year Noise Level Minus Existing N	Noise Level:	3			
Design Year with Barrier	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction, dB	5	6	7	7	7
Number of Benefited Residences	1	1	1	1	1
New Highway or More than 50% of Residences Predate 1978 <sup>b</sup>	No	No	No	No	No
Reasonable Allowance Per Benefited Residence	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000
Total Reasonable Allowance	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000

Note: N/A-Not applicable. Barrier does not provide 5 dB of noise reduction.

<sup>&</sup>lt;sup>a</sup> A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

<sup>&</sup>lt;sup>b</sup> This adjustment increases the abatement allowance by \$10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

Table G-8 – Predicted Future Noise Levels and Barrier Analysis – Alternative 2 – Segment 2 (Cont'd)

R 2.67 W. R 2.68 W R 2.69 W R 2.69 W R 2.70 W. R 2.71 W. R 2.72 W. R 2.72 W. R 2.73 W. R 2.73 W. R 2.73 W. R 2.75 W. R 2.75 W. R 2.75 W. R 2.76 W. R 2.76 W. R 2.76 W. R 2.78 W. R 2.79 W. R 2.70 W.						I-405 PA-ED Alternative 2 Future Worst Hour Noise Levels - Leq(h), dBA <sup>1,6</sup>																				
R 2.66 W SFR 1 60 MOD 65 66 1-1 2 8 667) NONE						e Level	·vel	evel	_			N	oise	Pre										s (I.L.),	and	d
R 2.66 W SFR 1 60 MOD 65 66 1-1 2 8 667) NONE		Ę		ţ		Poise	e Le	se L	S	δ Θ		8 f	feet		10 1	eet		12 f	eet		14 f	eet		16	5 fe∢	et
R 2.67 W- R 2.68 W R 2.69 W R 2.69 W R 2.69 W R 2.70 W- R 2.71 W R 2.72 W- R 2.73 W- R 2.73 W- R 2.73 W- R 2.75 W R 2.75 W R 2.75 W R 2.76 W R 2.76 W R 2.78 W R 2.79 W R 2.77 W R 2.77 R R 2.78 W R 2.79 W R 2.78 W R 2.78 W R 2.79 W R 2.78 W R 2.79 W R 2.78 W R 2.79 W R 2.78 W R 2.79 W R 2.78 W R 2.79 W R 2.78 W R 2.79 W R 2.78 W R 2.78 W R 2.78 W R 2.78 W R 2.79 W R 2.78 W R 2.79 W R 2.78	Receiver I.D.		Land Use <sup>2</sup>	of Dwelling	Existing Noise Leq(h), dBA <sup>1,3</sup>		Design Year Build Nois Leq(h), dBA¹	Design Year No Build Noi Minus Existing Conditions Leq(h), dBA	Design Year Build Noise Minus No Build Condition Leq(h), dBA	Activity Category (NAC)	Impact Type <sup>4</sup>	Leq(h)	I.L	NBR	Leq(h)	I.L	NBR	Leq(h)	-  -	NBR	Leq(h)	I.L	NBR	Leq(h)	I.L	NBR
R 2.68 W R 2.69 W R 2.69 W SFR 1 58 MOD 54 54 54 -1 0 B (67) NONE	N 2.00		_																							
R 2.69 W R 2.70 W SFR 3 65 MOD 64 66 -1 2 B (67) A/E	1 2.07																									
R 2.70 W* SFR 3 64 MOD 63 64 -1 1 B (67) NONE	11 2.00																									
R 2.71 W	11 2.09									` '															ļJ	
R 2.72 W* SFR 2 59 MOD 58 59 -1 1 1 B (67) NONE	1 2.70																								$\vdash$	
R 2.73 W- SFR 2 54 MoD 53 54 -1 1 1 8 (67) NONE			_				-																		+=-	
R 2.74 W SFR 3 64 MOD 63 63 -1 0 B (67) NONE					54 MOD																					
R 2.76 W SFR 4 64 MOD 63 58 -1 -5 B (67) NONE			SFR	3	64 MOD	63	63	-1	0	, ,	NONE											-				
R 2.77A	R 2.75 W		SFR	3		63	61	-1	-2	B (67)	NONE		T													
R 2.77 W R 2.77 W R 2.78 W R 2.78 W R 2.79 W R 2.80 W R 2.80 W R 2.81 W.C R 2.81 W.C R 2.83 W R 2.83 W R 2.83 W R 2.83 W R 2.84 W R 2.85 W R 2.85 W R 2.85 W R 2.86 W R 2.87 W R 2.87 W R 2.87 W R 2.87 W R 2.88 W R 2.89 W R 2.89 W R 2.89 W R 2.89 W R 2.80 W	R 2.76 W		SFR	4	64 MOD	63	58	-1	-5	B (67)	NONE															
R 2.78 W MFR	R 2.77A		SCH	1	74 <sup>MOD</sup>	75	77	1	2	B (67)	NONE	72	5	1	71	6	1	70 R,T	7	1	70	7	1	70	7	1
R 2.79 W MFR 4 65 MOD 66 62 1 -4 B (67) NONE 59 3 0 59 3 0 58 4 0 58 4 0 58 4 0 60 4 0	1 2.11		MFR	2		61	61	1	0	B (67)	NONE	59		0	58	3	0		3	0	58	3	0		3	0
R 2.80 W R 2.81 W.C R 2.82 W R 2.83 W R 2.83 W R 2.84 W R 2.84 W R 2.85 W R 2.86 W R 2.87 W R 2.86 W R 2.87 W R 2.86 W R 2.86 W R 2.86 W R 2.87 W R 2.86 MOD 66 66 67 O 1 B (67) NONE	11 2.70		MFR	4		62	61	1	-1	B (67)	NONE	58		0	58	3	0	57	4	0	57	4	0	57	4	0
R 2.81 W.C S786, S788, R 2.82 W SFR 3 68 MOD 69 67 1 -2 B (67) A/E	1 2.79			4			-	1	-4	` '		59		0	59			58	4	0		4	0		4	0
R 2.81       W       S788, 8       SFR 3 66 MOD       68 68 1 0 0 B (67)       A/E	1 2.00	S786											3							0						0
R 2.83 W S792 Shoulder R 2.85 W SFR 3 66 MOD 66 65 0 -1 B (67) NONE 64 1 0 63 2 0 0	1 2.01									` '														_	-	3
R 2.83 W S792 Shoulder SFR 3 66 MD 66 65 0 -1 B (67) NONE 64 1 0 63 2 0 0	1 2.02	,	_							. , ,																0
R 2.85 W Shoulder SFR 4 66 MOD 66 67 0 1 B (67) A/E 66 1 0 65 2 0 R 2.86 W SFR 3 65 MOD 65 65 0 0 0 B (67) NONE 64 1 0 63 2 0 R 2.87 W SFR 4 64 MOD 64 64 0 0 0 B (67) NONE 63 1 0 62 2 0 R 2.88 W SFR 4 62 MOD 62 62 0 0 0 B (67) NONE	11 2.03				66 MUT11 CAL																					
R 2.86 W SFR 3 65 MOD 65 65 0 0 0 B (67) NONE 64 1 0 63 2 0 R 2.87 W SFR 4 64 MOD 64 64 0 0 0 B (67) NONE 63 1 0 62 2 0 R 2.88 W SFR 4 62 MOD 62 62 0 0 0 B (67) NONE	11 2.04	Shoulder	_																							
R 2.87 W SFR 4 64 MOD 64 64 0 0 B (67) NONE 63 1 0 62 2 0 R 2.88 W SFR 4 62 MOD 62 62 0 0 B (67) NONE	17 2.00									,							_									
R 2.88 W SFR 4 62 MOD 62 62 0 0 B (67) NONE	11 2.00		_							. ,			-													
R 2.89 W SFR 3 63 MOD 63 60 0 -3 B (67) NONE	1\ 2.07					_	_	_	_	, ,	_												-		_	
R 2.90 W SFR 3 62 MOD 62 59 0 -3 B (67) NONE	11 2.00									. ,															+=-	
										` ′															$\vdash$	
																									+	
R 2.92 W SFR 1 61 MOD 61 61 0 0 B (67) NONE			_				-			, ,	_															

- 1 Leq(h) are A-weighted, peak hour noise levels in decibels.
- 2 Land Use: SFR single-family residence; MFR multi-family residence; MH mobile Home; MOT motel/hotel; SCH school; REC recreational/park; REL religious institution; LIB library.
- 3 M Measured noise level; STxx or LTxx measurement site number; CAL noise model calibration site; MOD Estimated from No-Build Alternative and measurement sites.
- 4 S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
- 5 Barrier height needed to meet requirements at adjacent receptor(s).
- 6 Traffic noise from the freeway only; other local noise sources are not included.
- 7 Existing soundwall is at a height of 16 feet.
- ${\sf R-The\ minimum\ height\ to\ meet\ feasibility\ requirements\ of\ Caltrans'\ Noise\ Abatement\ Criteria.}$
- T Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
- C Critical design receiver.
- Int The modeled exterior noise levels have been reduced based on window types and the interior noise criteria has been used for this receiver because there is no outdoor use.
- W Reciever protected by existing private property wall or soundwall.
- \* Non first row residences.

# Table H-8 – Barrier Locations and Elevations – Alternative 2 – Segment 2 (Cont'd)

Barrier No.	Receivers Protected (Receiverr No.)	Barrier Location / Hwy. Side	Barrier Stations <sup>1</sup>	Approximate Barrier Height, ft	Top of Barrier Elevation <sup>2</sup> , ft
S776	R2.77A	R/W / Northbound	774+00 <sup>10</sup> 774+25 <sup>10</sup> 774+50 <sup>10</sup> 774+75 <sup>10</sup> 775+00 <sup>10</sup> 776+00 <sup>10</sup>	12 12 12 12 12 12	43.5 43.4 43.3 43.2 42.9
		Appro	776+25 <sup>10</sup> 776+50 <sup>10</sup> eximate Length: 250	12 12 ft	42.8 42.8

- 1 Stations correspond to that of I-405 mainline unless otherwise noted.
- 2 Top of barrier elevations shall take precedence over specified barrier heights for design and construction purposes.
- 3 In-kind replacement of an existing soundwall at new location with same height.
- 4 Replacement of existing soundwall at new location with new height.
- 5 Replacement of existing soundwall at same location with new height.
- 6 Stations correspond to that of the southbound on ramp at Talbert Avenue.
- 7 Stations correspond to that of the northbound off ramp at Brookhurst Avenue.
- 8 Stations correspond to that of the southbound off ramp at Brookhurst Avenue.
- 9 Stations correspond to that of the northbound off ramp at Magnolia Street.
- 10 Stations correspond to that of the northbound off ramp at Warner Avenue.

## Alternative 3

Table 7-51A. Summary of Reasonableness Determination Data – Alternative 3 – Soundwall S776

Barrier I.D.: S776					
Predicted Sound Level without Barrie	r				
Critical Design Receiver: R2.77A					
Design Year Noise Level, dBA L <sub>eq</sub> (h):	77				
Design Year Noise Level Minus Existing	Noise Level:	3			
Design Year with Barrier	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction, dB	5	6	7	7	7
Number of Benefited Residences	1	1	1	1	1
New Highway or More than 50% of Residences Predate 1978 <sup>b</sup>	No	No	No	No	No
Reasonable Allowance Per Benefited Residence	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000
Total Reasonable Allowance	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000

Note: N/A-Not applicable. Barrier does not provide 5 dB of noise reduction.

<sup>&</sup>lt;sup>a</sup> A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

<sup>&</sup>lt;sup>b</sup> This adjustment increases the abatement allowance by \$10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

Table G-14 – Predicted Future Noise Levels and Barrier Analysis – Alternative 3 – Segment 2 (Cont'd)

					I-405 PA-ED Alternative 3 Future Worst Hour Noise Levels - Leq(h), dBA <sup>1,6</sup>																				
					e Level	ivel	Level	_			No	oise	Pre				arrier, Benefit						ss (I.L.)	, an	d
	ç		its		loise	e Le	ġ.	s Leve			8 f	eet		10	feet 12		12 f	eet		14 feet			10	t	
Receiver I.D.	Barrier I.D. and Location	Land Use <sup>2</sup>	Number of Dwelling Units	Existing Noise Level Leq(h), dBA <sup>1,3</sup>	Design Year No Build Noise Level Leq(h), dBA¹	Design Year Build Noise Level Leq(h), dBA¹	Design Year No Build Noise Minus Existing Conditions Leq(h), dBA	Design Year Build Noise Level Minus No Build Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type <sup>4</sup>	Leq(h)	I.L	MBR	Leq(h)	I.	NBR	Leq(h)	I'L	MBR	Leq(h)	I.L	NBR	Leq(h)	I.L	MBR
R 2.66 W		SFR	3	66 MOD	65	66	-1	1	B (67)	A/E													7		
R 2.67 W*		SFR	1	60 MOD 55 MOD	59	61	-1	2	B (67)	NONE													/		
1 2.00		SFR	3	65 MOD	54 64	54 66	-1 -1	0 2	B (67)	NONE A/E													'		
11 2.09		SFR	1	58 MOD	57	58	-1 -1	1	B (67)	NONE													7		
R 2.70 W*	ŀ	SFR	3	64 MOD	63	64	-1 -1	1	B (67)	NONE													7		
R 2.72 W*	ŀ	SFR	2	59 MOD	58	59	-1	1	B (67)	NONE													7		
R 2.73 W*	ŀ	SFR	2	54 MOD	53	54	-1	1	B (67)	NONE													7		
R 2.74 W		SFR	3	64 MOD	63	63	-1	0	B (67)	NONE															
R 2.75 W		SFR	3	64 MOD	63	61	-1	-2	B (67)	NONE															
R 2.76 W	ľ	SFR	4	64 MOD	63	58	-1	-5	B (67)	NONE															
R 2.77A	S776 / R/W	SCH	1	74 <sup>MOD</sup>	75	77	1	2	B (67)	NONE	72	5	1	71	6	1	70 R,T	7	1	70	7	1	70	7	1
R 2.77 W		MFR	2	60 MOD	61	61	1	0	B (67)	NONE	59	2	0	58	3	0	58	3	0	58	3	0	58	3	0
R 2.78 W		MFR	4	61 <sup>M,ST19</sup>	62	61	1	-1	B (67)	NONE	58	3	0	57	4	0	57	4	0	57	4	0	57	4	0
R 2.79 W		MFR	4	65 MOD	66	62	1	-4	B (67)	NONE	59	3	0	59	3	0	58	4	0	58	4	0	58	4	0
R 2.80 W	S786,	SFR	3	64 MOD	65	64	1	-1	B (67)	NONE	61	3	0	61	3	0	61	3	0	60	4	0	60	4	0
R 2.81 W,C	S788,	SFR	3	68 <sup>MOD</sup>	69	67	1	-2	B (67)	A/E							T			63	4	0	62 R	5	3
R 2.82 W	& .	SFR	2	67 MOD	68	68	1	0	B (67)	A/E							Т			65	3	0	64	4	0
R 2.83 W	S792	SFR	3	66 MOD	66	65	0	-1	B (67)	NONE										64	1	0	63	2	0
1 2.04	Shoulder	SFR	4	66 MOD	66	66	0	0	B (67)	A/E							'			65	1	0	64	2	0
11 2.00		SFR	4	66 MOD 65 MOD	66 65	67	0	1	B (67)	A/E							'			66	1	0	65	2	0
1 2.00		SFR SFR	3	65 MOD 64 MOD	65 64	65 64	0	0	B (67)	NONE										64 63	1	0	63 62	2	0
R 2.87 W		SFR	4	62 MOD	62	63	0	1	B (67)	NONE											1	U	62	2	
R 2.89 W	}	SFR	3	63 MOD	63	60	0	-3	B (67)	NONE			_			-									
R 2.90 W		SFR	3	62 MOD	62	59	0	-3	B (67)	NONE									_						
R 2.91 W		SFR	2	63 MOD	63	62	0	-1	B (67)	NONE															
R 2.92 W		SFR	1	61 MOD	61	61	0	0	B (67)	NONE															

- 1 Leq(h) are A-weighted, peak hour noise levels in decibels.
- 2 Land Use: SFR single-family residence; MFR multi-family residence; MH mobile Home; MOT motel/hotel; SCH school; REC recreational/park; REL religious institution; LIB library.
- 3 M Measured noise level; STxx or LTxx measurement site number; CAL noise model calibration site; MOD Estimated from No-Build Alternative and measurement sites.
- 4 S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
- 5 Barrier height needed to meet requirements at adjacent receptor(s).
- 6 Traffic noise from the freeway only; other local noise sources are not included.
- 7 Existing soundwall is at a height of 16 feet.
- ${\sf R-The\ minimum\ height\ to\ meet\ feasibility\ requirements\ of\ Caltrans'\ Noise\ Abatement\ Criteria.}$
- T Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
- C Critical design receiver.
- Int The modeled exterior noise levels have been reduced based on window types and the interior noise criteria has been used for this receiver because there is no outdoor use.
- W Reciever protected by existing private property wall or soundwall.
- \* Non first row residences.

# Table H-14 – Barrier Locations and Elevations – Alternative 3 – Segment 2 (Cont'd)

Barrier No.	Receivers Protected (Receiverr No.)	Barrier Location / Hwy. Side	Barrier Stations <sup>1</sup>	Approximate Barrier Height, ft	Top of Barrier Elevation <sup>2</sup> , ft
S776	R2.77A	R/W /	774+00 <sup>10</sup>	12	43.5
		Northbound	774+25 <sup>10</sup>	12	43.4
			774+50 <sup>10</sup>	12	43.4
			774+75 <sup>10</sup>	12	43.3
			775+00 <sup>10</sup>	12	43.2
			776+00 <sup>10</sup>	12	42.9
			776+25 <sup>10</sup>	12	42.8
			776+50 <sup>10</sup>	12	42.8
		Appro	oximate Length: 250	ft	

- 1 Stations correspond to that of I-405 mainline unless otherwise noted.
- 2 Top of barrier elevations shall take precedence over specified barrier heights for design and construction purposes.
- 3 In-kind replacement of an existing soundwall at new location with same height.
- 4 Replacement of existing soundwall at new location with new height.
- 5 Replacement of existing soundwall at same location with new height.
- 6 Stations correspond to that of the southbound on ramp at Talbert Avenue.
- 7 Stations correspond to that of the northbound off ramp at Brookhurst Avenue.
- 8 Stations correspond to that of the southbound off ramp at Brookhurst Avenue.
- 9 Stations correspond to that of the northbound off ramp at Magnolia Street.
- 10 Stations correspond to that of the northbound off ramp at Warner Avenue.